

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

A minor formal change is made to the specification.

Claims 1 and 4-10 are present in this application. Claims 1 and 4 are amended and claim 9 is added by way of the present amendment. Claims 9 and 10 recite the position of the matching device in a space, and the position of the feeding rod, which are supported by, for example, Fig. 1. No question of introduction of new matter is believed raised by new claims 9 and 10.

Under 35 U.S.C §103(a), claims 1, 4-6 and 8 are rejected over US 5,990,016 (Kim et al.) in view of US 5,565,036 (Westendorp et al.), US 6,089,181 (Suemasa et al.), US 5,342,471 (Fukusawa et al.) and US 5,298,466 (Brasseur), and claim 7 is rejected over Kim et al. in view of Westendorp et al., Suemasa et al., Fukusawa et al. and Brasseur and further in view of US 5,707,486 (Collins).

The Applicants greatly appreciate the interview conducted with Examiner Crowell, which was also attended by Mr. Hassanzadeh. During the interview Applicants' representative explained how the plasma processing apparatus according to claim 1 was different from the cited references. In particular, claim 1 recites a vacuum chamber in which processing is to be applied on a substrate, and a first power feeder having a first matching device that performs impedance matching for the radio-frequency power to be applied to the bottom electrode. Claim 1, prior to the present amendment, recited a space formed between an insulator plate on which the bottom electrode is supported at the bottom of the vacuum chamber that is set to a ground potential, where the first matching device is disposed in the space. Applicants' representative explained that the space is within the vacuum chamber and all of the prior art references cited in rejecting the claims disclose a matching device disposed outside of the vacuum chamber.

Examiner Crowell explained that “space” could be interpreted to include the area in the apparatus of figure 1 in Brasseur extending from the lower side of bottom electrode 4 to the lower portion of the unlabelled pipe next to which matching network 6 is shown.

Claim 4 was also discussed and recites a non-coaxially structured feeding rod electrically connecting the bottom electrode to the first matching device. Applicants’ representative also explained that such a rod, disposed in the vacuum chamber was also not disclosed or suggested in the prior art. In particular, Brasseur shows power is fed from matching network 6 through an unlabelled line which is exterior to the vacuum apparatus and enters the apparatus at the rounded indentation in the central portion of the figure below bottom electrode 4.

The position of the first matching device has been clarified in claim 1, which recites “at least a portion of said matching device is disposed in the vacuum chamber.” This is supported, for example, by figure 1 illustrating matching device 14 and chamber 1. As was discussed in the interview and has been pointed out in the prior response, none of the prior art of record discloses or suggests a matching device where at least a portion thereof is disposed in vacuum chamber. For example, referring to the remarks in paragraph 5 on page 6 of the Office Action, the matching network 6 of Brasseur was found to be “simply beside” the chamber or exhaust pipe and is “not located in the exhaust pipe since that would cause deterioration of the matching device.” As Brasseur is relied upon for the position of the matching device, it is respectfully submitted that claim 1 is patentably distinguishable over the cited prior art and in condition for allowance.

In the discussion of the rejection of claim 4 on page 5 of the Office Action, figure 9 of Kim et al. is asserted to show a non-coaxially structured feeding rod. However, there is no description in Kim et al. of how the power from power source 96 is fed to susceptor 92. If the power supply is external to the chamber, which is likely, then a non-coaxially structured

feeding rod is not suggested by Kim et al. In any case, none of the prior art discloses or suggests a feeding rod as recited in claim 4 in a system where the first matching device is located at least partly within the vacuum chamber.

The present amendment is submitted under the provisions of 37 C.F.R. §1.116, which allow entry of amendments after final rejection placing application in condition for allowance. As the present amendment is believed to place the application in condition for allowance, the present amendment can be entered. Entry of the present amendment is respectfully requested.

It is respectfully submitted that the present application is in condition for allowance, and a favorable decision to that effect is respectfully requested.

Respectfully submitted,

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